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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,577	02/19/2004	Feng Lin	303.876US1	4735
21186	7590	06/17/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.			NGUYEN, VINCENT Q	
P.O. BOX 2938			ART UNIT	
MINNEAPOLIS, MN 55402-0938			PAPER NUMBER	
			2858	
DATE MAILED: 06/17/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/782,577	LIN, FENG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vincent Q. Nguyen	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 10-20,30-44 and 53-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9,21-29 and 45-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/20/2005</u> .   | 6) <input type="checkbox"/> Other: ____                                     |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, 21-29, 45-52, drawn to a system circuit, classified in class 324, subclass 601.
  - II. Claims 10-20, 30-39, drawn to memory device for calibration, classified in class 702, subclass 85.
  - III. Claims 40-44, drawn to memory device and chain delay elements for calibration, classified in class 324, subclass 76.54.
  - IV. Claims 53-59, drawn to method for calibration, classified in class 324, subclass 601.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and (II, III, IV) are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because all the limitations such as measuring unit to perform measurement based on a propagation of the pulse within the measuring unit (e.g. claim 10), the first, the second, the third, the fourth chain delays (e.g. claim 40), the method of sampling having step of generating a pulse with an initial measurement (e.g. claim 53) is not found in Group I. The

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subcombination has separate utility such as the measuring unit to perform measurement based on a propagation of the pulse within the measuring unit can be used in a DTR system; the first, the second, the third, the fourth chain delays can be used in any electrical system, which requires delay; the method as claimed can be used in any sampling system.

Inventions II and (III, IV) are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because all the limitations such as, the first, the second, the third, the fourth chain delays (e.g. claim 40), the method of sampling having step of generating a pulse with an initial measurement (e.g. claim 53) is not found in Group II. The subcombination has separate utility such as the first, the second, the third, the fourth chain delays can be used in any electrical system, which requires delay; the method as claimed can be used in any sampling system.

Inventions III and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the

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particulars of the subcombination as claimed because all the limitations such as the method of sampling having step of generating a pulse with an initial measurement (e.g. claim 53) is not found in Group III. The subcombination has separate utility such as the steps of generating pulse and sampling as claimed can be used in any sampling system.

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group (II, III, IV), restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Viet V. Tong on June 14, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9, 21-29, 45-52. Affirmation of this election must be made by applicant in replying to this Office action.

5. Claims 10-20, 30-44, 53-59 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-9, 21-29, 45-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Jefferson et al. (6,130,552).

Regarding claim 1, Jefferson et al. discloses a circuit comprising (figure 4) a measuring path (106) for receiving a reference signal to sample a pulse to obtain a measured delay; a forward path (112, 114, 116, 118) connected to the measuring path (106) for delaying the reference signal based on the measured delay to generate an internal signal (104); and a feedback path (104) connected to the measuring path (106) and the forward path, the feedback path (104) including a calibrating unit (122) for generating the pulse based on a plurality of feedback signals generated from the reference signal, wherein the calibrating unit is configured to conditionally adjust a pulse width of the pulse (Element 122 compensates for internal delays, thus it calibrates internal delays) (Column 6, lines 32-34).

Pertinence to the discussion of claim 1 above, regarding claims 22, 45, Jefferson et al. discloses a system comprising (1A) a processor (101A), and a memory device (105A) connected to the processor; an output data path (131, 135) for outputting the data; and a delay lock circuit (Figure 1D) connected to the data path for providing an internal signal (120) to control a transfer of data at the output data path, the delay lock circuit including (figure 1D) a measuring path (106) for receiving a reference signal to sample a pulse to obtain a measured delay; a forward path (112, 114, 116, 118) connected to the measuring path (106) for delaying the reference signal based on the measured delay to generate the internal signal; and a feedback path (104) connected to the measuring path and the forward path, the feedback path including a calibrating unit (122) for generating the pulse based on a plurality of feedback signals generated from the reference signal, wherein the calibrating unit is configured to conditionally adjust a

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pulse width of the pulse (Element 122 compensates for internal delays, thus it calibrates internal delays) (Column 6, lines 32-34).

Regarding claims 2-5, 22-26, 46-48, Jefferson et al. discloses calibrating unit (122) includes a selectable delay segment for delaying the reference signal to generate a first feedback signal of the plurality of feedback signals (Column 6, lines 53-54).

Regarding claims 6, 49, it is inherent that Jefferson et al. discloses a generator connected to the selectable delay segment and the model delay segment for generating the pulse based on the first and second feedback signals since the element 122 is implemented using programmable delay elements (Column 6, lines 53-54).

Regarding claims 7, 27, 50, Jefferson et al. discloses the measuring path (106) includes a monitoring unit (112) for enabling the calibrating unit to adjust the pulse width of the pulse.

Regarding claims 8, 28, 51, Jefferson et al. discloses the measuring path (106) further includes a measuring unit for propagating the pulse (In order to detect phase, element 106 must propagate the pulse).

Regarding claims 9, 29, 52, Jefferson et al. discloses the monitoring unit (210) (Figure 4) is configured to reset the measuring unit when the pulse width is adjusted (Column 10, lines 17-27).

Regarding claim 22, Jefferson et al. discloses the calibrating unit includes a selectable delay segment for delaying the reference signal to generate a first feedback signal of the plurality of feedback signals.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent No.5,994,938 (Lesmeister) discloses a self-calibrating programmable phase shifter includes a tapped delay line for successively delaying a periodic reference signal to produce a set of phase distributed tap signals.

Patent No. 6,411,142 (Abbasi et al.) discloses a self-calibration current range setting circuit to improve speed in detecting and locking to an incoming signal and improves DLL jitter performance, provides greater immunity to environmental noise, and improves the power supply rejection ratio (PSRR).

US Publication No. 2005/0057291A1 (Nguyen et al.) discloses a closed loop self-calibration technique to optimize output duty cycle for a single die to be packaged in different package types and to adapt to different channel loading characteristics.

### ***Contact Information***

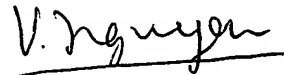
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q. Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent



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A handwritten signature in black ink, appearing to read "V. Nguyen", written over a horizontal line.

June 15, 2005

Vincent Q. Nguyen  
Primary Examiner  
Art Unit 2858

EXAMINER DRAFT.

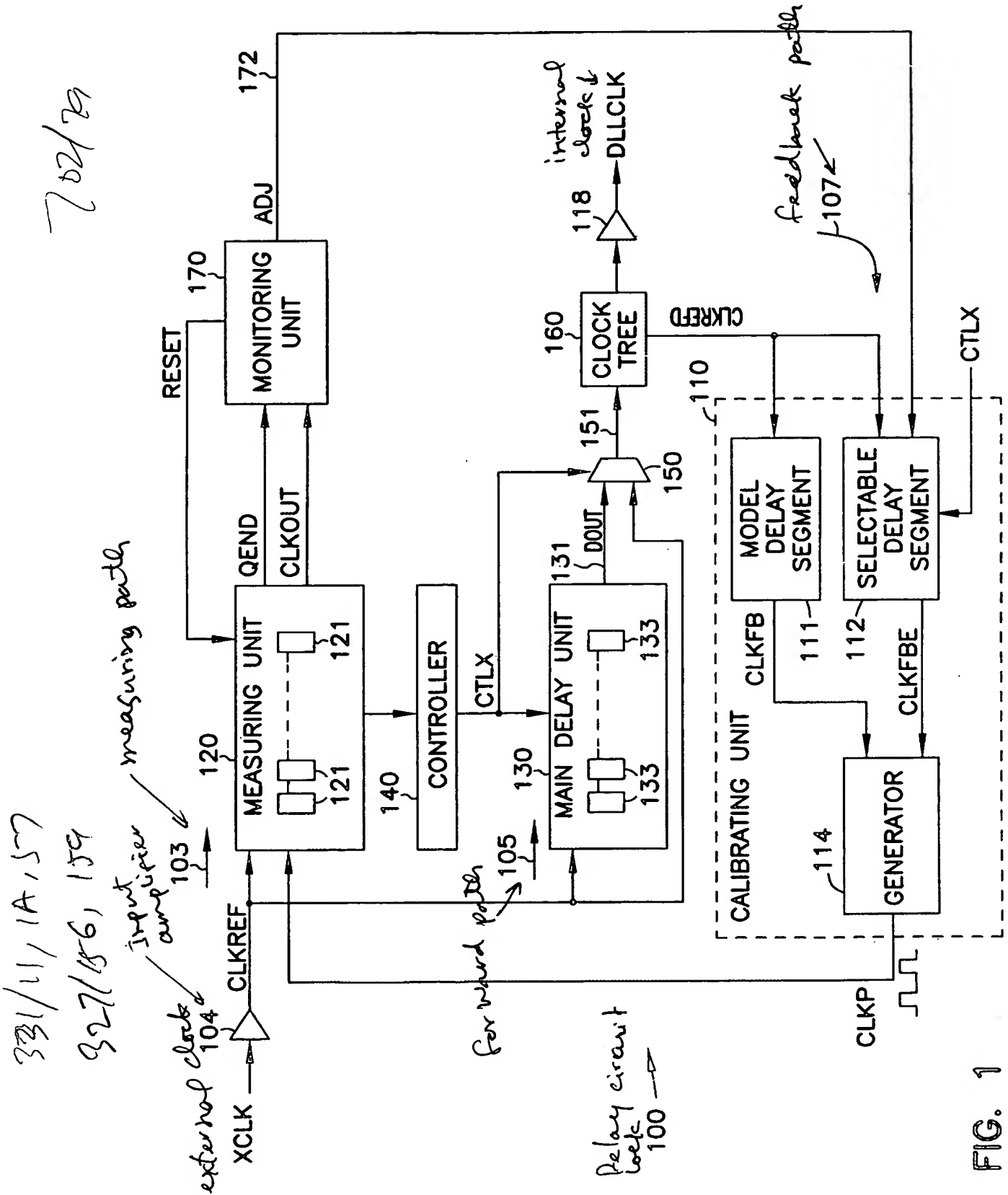


FIG. 1